

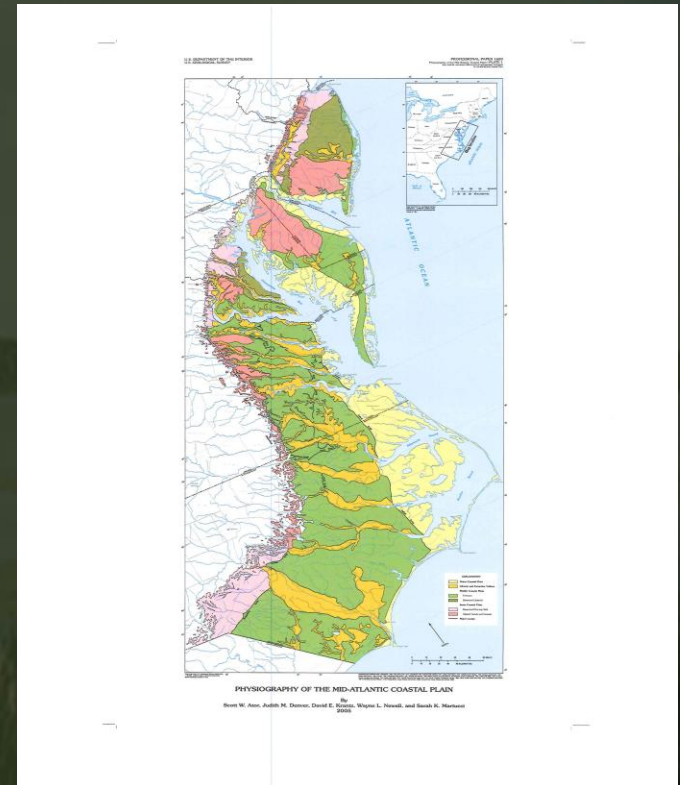
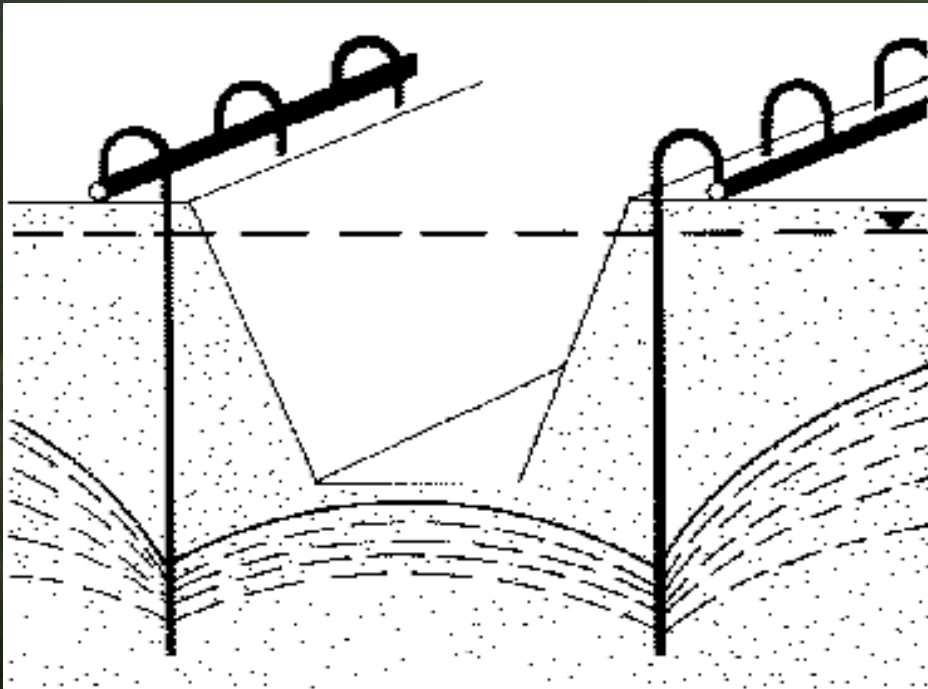
# VIRGINIA 2012 REGIONAL BROWNFIELDS CONFERENCE



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# VIRGINIA 2012 REGIONAL BROWNFIELDS CONFERENCE

## Where is it an issue?



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## Traditional Approach



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# Why Was it A Concern in Virginia Beach?

- Virginia Beach is an MS-4 Locality
- Previous problems with surface water quality violations and permit compliance
- Commitment to VDEQ to comply with all permit requirements
- Leadership within the City understood the importance of handling environmental concerns correctly
- Public Works & Utility PMs personally responsible
- PM with strong background in contaminant assessment



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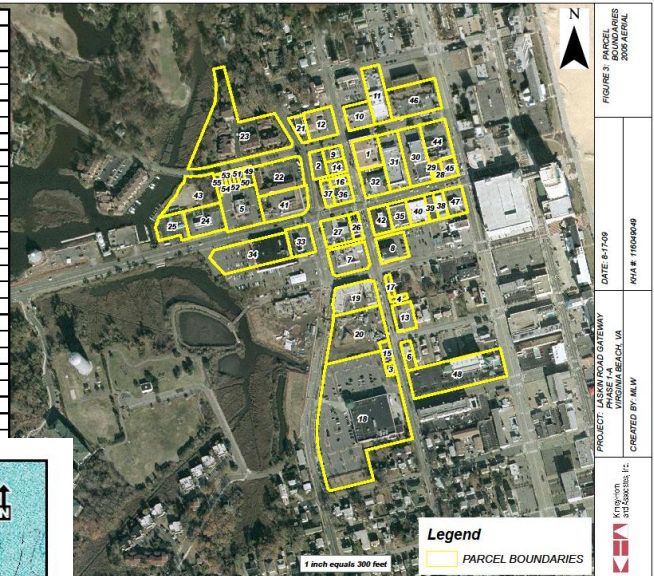
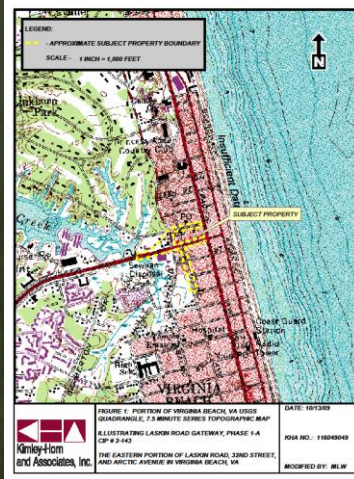


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## Laskin Gateway – A Dewatering Challenge

- Shallow groundwater table
- Deep utility work
- Old commercial district
- Known contamination
- Large dewatering volume
- Adjacent waterway under a TMDL
- Tight construction schedule
- Limited space for equipment
- High degree of public scrutiny

KEY			
PARCEL ID#	GPIN	PARCEL ID#	GPIN
1	24189282150000	29	24280211460000
2	24189251690000	30	24280202570000
3	24189191130000	31	24189292340000
4	24189194680000	32	24189281410000
5	24189119480000	33	24189147690000
6	24280101380000	34	24189127020000
7	24189177300000	35	24189198860000
8	24189197520000	36	24189270040000
9	24189262450000	37	24189260020000
10	24189274650000	38	24280210810000
11	24189286420000	39	24280119460000
12	24189264020000	40	24280109870000
13	24280103080000	41	24189139880000
14	24189261780000	42	24189189940000
15	24189192010000	43	24188290210000
16	24189261810000	44	24280212790000
17	24189195180000	45	24280221370000
18	24189079410000	46	24280205730000
19	24189175400000	47	24280129480000
20	24189173410000	48	24280120490000
21	24189243680000	49	24189211830000
22	24189216590000	50	24189211420000
23	24189213110000	51	24189211220000



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## COMING SOON

Exciting Retail Opportunities  
at 310 Ocean

A MIXED-USE DEVELOPMENT BY GOLD KEY/PHR



### Summerhouse

Resort Lifestyle Apartments

Exciting Boutiques,  
Restaurants & Cafés  
Class "A" Office Space

OFFICIAL  
STATE  
INSPECTION  
STATION





# Groundwater and Soil Investigation



- Corridor Hazardous Materials Recon Survey
  - Historical records review
  - Interviews, questionnaires
- Identified numerous gas stations, dry cleaning facilities and LUSTs
- Conducted selected soil and groundwater testing to confirm
- Localized the general nature of contamination in ROW



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Beach  
Automobile  
SERVICE CENTER

SPEED  
LIMIT  
25

YTR-9183

PRO

582.1



KEY		
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1 24189243680000	49	24189211830000
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3 24189213110000	51	24189211220000
4 24188198650000	52	24189201910000
5 24188178830000	53	24189201710000
6 24189178460000	54	24189201500000
7 24189168430000	55	24189200290000
8 24280211840000		

# LEGEND:

- = APPROXIMATE SOIL BORING LOCATION
- = PARCEL ID NUMBER
- = PARCEL BOUNDARIES
- = ANTICIPATED VPDES TREATMENT ZONE

SCALE: 1 inch = 160 feet

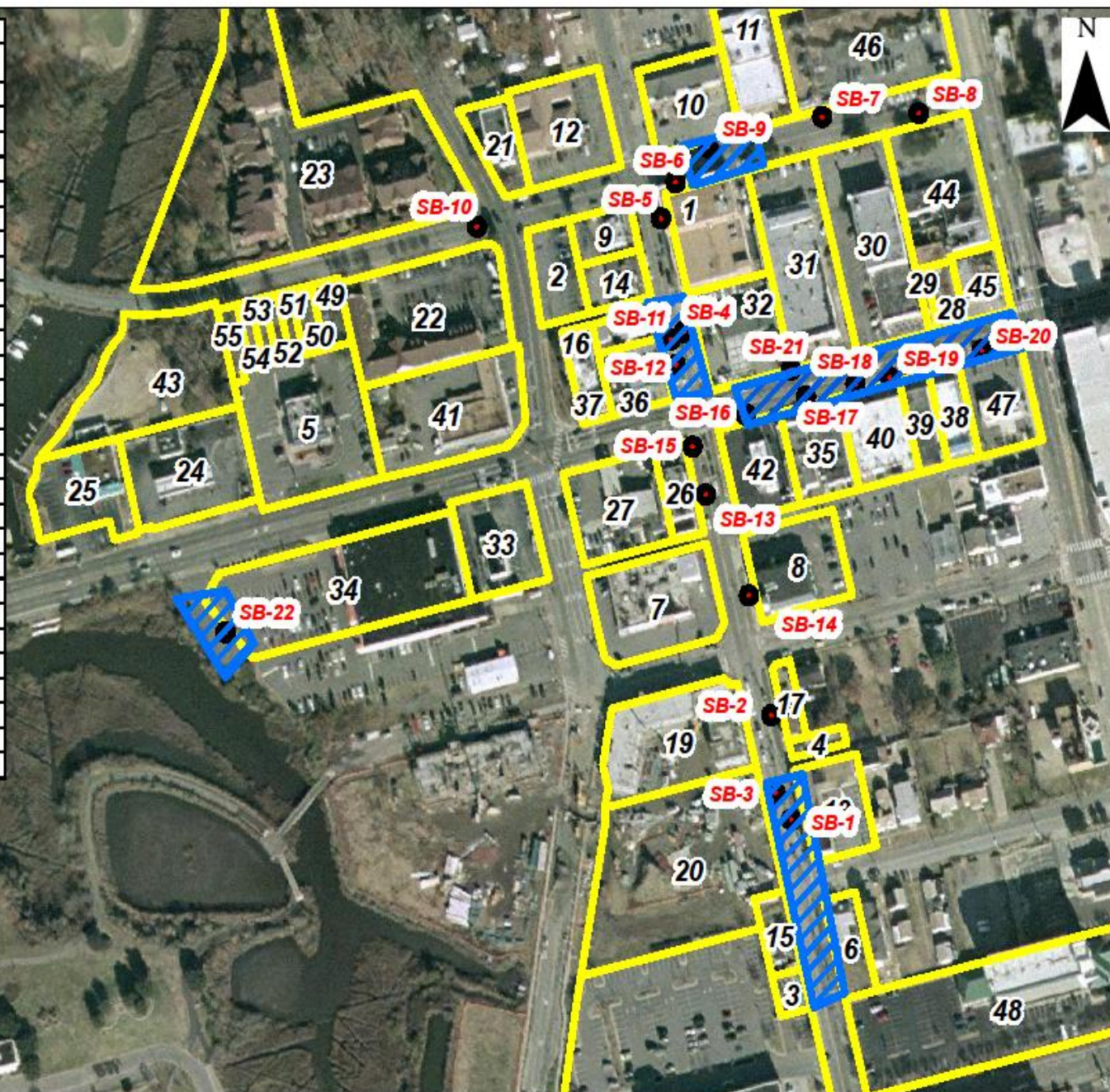


FIGURE 4: SOIL BORING  
AND TREATMENT ZONE  
LOCATION MAP  
2006 AERIAL

DATE: 10-22-09

KHA # 116049049

PROJECT: LASKIN ROAD GATEWAY  
PHASE 1-A  
VIRGINIA BEACH, VA

CREATED BY: MLW





## Dewatering Challenges

- Detected high levels of contamination two weeks before construction
- Both Public Works and Public Utilities involved
- Needed permits and treatment system fast in order to prevent construction delays!
- No pump test data available to provide estimated volume of discharge
- Limited space for mobilization
- No contingency in project funding to address environmental concerns



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# Now What? – Fast Track Permitting!

- Permitting strategy – two track approach
  - HRSD Industrial Wastewater Permit
  - VPDES General Permit for Dewatering Discharge
- Excellent response from both HRSD and VDEQ
- Permits secured in 10 days!



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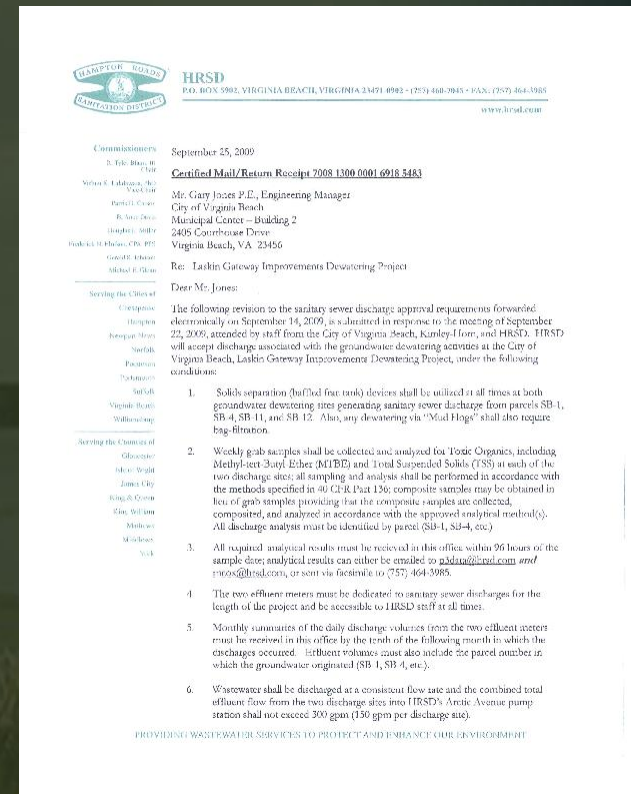
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## HRSD Wastewater Permit

- Effluent limitations for Toxic Organics, MTBE, Metals and TSS
- Weekly grab samples
- Effluent metering – limited to 300 gpm flow rate limit per discharge station based on pipe size of receiving sewer
- Monthly reporting of daily readings
- Solids separation before discharge
- Charged for treatment



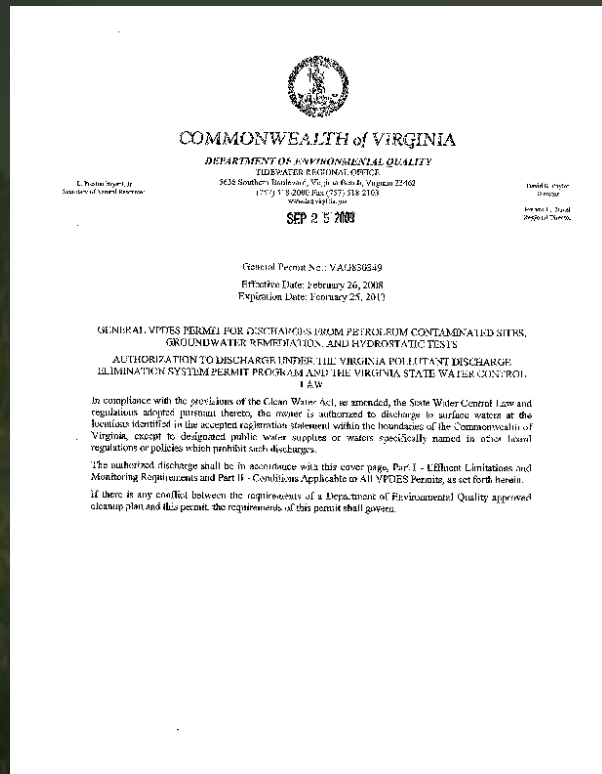
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## VPDES General Permit (VAG 830349)



- Effluent limitations
  - BTEX & MTBE
  - pH
  - Total Recoverable Lead
  - Ethylene Dibromide
  - 1,2 Dichloroethane
  - Ethanol
  - Chlorinated hydrocarbon solvents
- Monthly sampling and DMRs
- O&M Manual for treatment systems
- No volume limit
- Likely pre-treatment required



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## Treatment System Configuration

- 20K gal Frac tank
- Dual High pressure bag filters
- Shallow tray air stripper
- In line meter
- Mounted on a skid
- Discharge to storm sewer



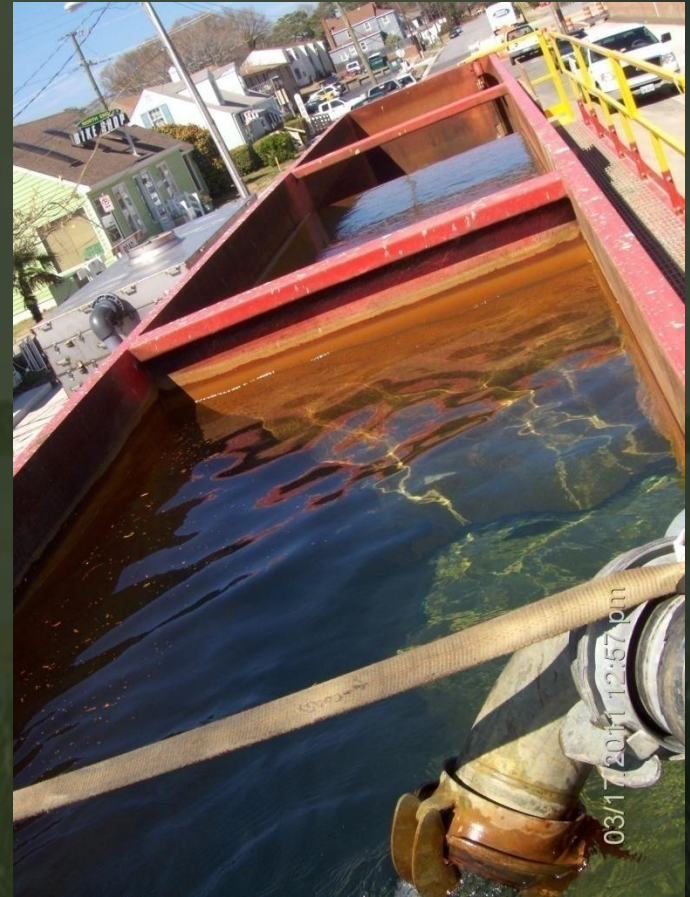
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## Project Costs

- Discharge from September 09 to March 11.
- 40.3 millions gallons discharged
- HRSD treatment fees: \$157K
- Treatment equipment rental: \$182K
- Total pumping and treatment costs to date: 1.4 cents/gallon



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## Lessons Learned

- Know when you may encounter contaminated groundwater
- Start environmental investigations early
- Have required permits in hand prior to the start of construction
- Budget for treatment systems
- Develop bid specs and line items from bid sheets reflecting all of the treatment equipment anticipated.



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# Public Utilities Dewatering Manual

## Two categories of discharge urgency

### – *Emergency:*

- Completion within 30 days
- Streamline approach for environmental assessment through worksheets
- GIS applications to quickly locate impacted sites

### – *Planned Construction:*

- Not scheduled to commence for at least 30 days
- More traditional Environmental Site Assessments



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# Technical Advisory Committee

- [illegible]



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## Benefits

- Procedure protects the Contractor and Municipality from NOVs under the CWA
- Avoids fines and adverse publicity
- Gives clear direction to the contractor
- Avoids change orders based on dealing with contaminants
- Reduces the risk of construction delays
- Protects our waterways!



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## For More Information.....

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- HRSD – 757.460.2261
- VDEQ (Tidewater Office) – 757.518.2000



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